Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
IP-Enabled Services	)	WC Docket No. 04-36
	)	
_____	)	

Comments of the Rehabilitation Engineering Research Center on Telecommunications Access

Gregg C. Vanderheiden, Co-Principal Investigator
Judith E. Harkins, Co-Principal Investigator

RERC on Telecommunications Access
C/o Gallaudet University
800 Florida Avenue, NE
Washington, DC 20002

Of counsel:

Karen Peltz Strauss
KPS Consulting
2120 L Street, NW
Suite 400
Washington, DC 20007
202-478-6148

May 28, 2004

SUMMARY

IP-enabled services can provide significant benefits for people with disabilities, including older Americans. But past failures of the competitive marketplace to provide accessibility to these populations indicate that the only way that people with disabilities will truly reap the benefits of these services is if the FCC mandates their accessibility. If IP-enabled services and technologies are not required to be accessible, the likely lack of access to these products and services that will result will impose ever-increasing barriers in daily living, negatively affect employment, and prevent people with disabilities from enjoying the communications access to which they have become accustomed.

The need to formally mandate access to IP-enabled services is already evidenced by a number of potential and real accessibility problems, including, but not limited to matters concerning TTY and hearing aid compatibility, accessible user interfaces, 7-1-1 relay access, and access to emergency centers. Equally important is the need to ensure that new and evolving IP-enabled service offerings are usable by and interoperable for people with disabilities. The Commission has more than ample authority under both its universal service obligation and its ancillary jurisdiction to address these disability issues.

IP-borne communications services use software-based approaches that can readily be tailored to resolve many, if not all potential access barriers. But to be effective and non-burdensome, access solutions need to be incorporated when these services are first being designed and developed. If the FCC and consequently, industry wait too long, retrofitting these services to include these features later on could become very time and resource intensive. In deciding which IP-enabled services are to be covered by disability access regulations, the Rehabilitation Engineering Research Center on

Telecommunications Access (RERC-TA) urges the Commission to discard its current distinctions between telecommunications and information services. As the Commission notes, increasingly, we are seeing a continuum of products that are capable of transporting conversation over a variety of platforms. There will be no clear breaks in this continuum and at times, it will be difficult or even impossible to determine where a particular product or service begins and where it ends. Artificially separating IP-enabled services into telecommunications or information service categories based on their underlying technology will cause serious accessibility gaps and confusion for consumers, and result in a very uneven playing field for companies who may end up following different rules for nearly identical services that happen to be provided over different transmission protocols. A distinction that was perhaps once helpful has outlived its usefulness.

Rather, in this environment, the RERC-TA believes that the Commission should focus on function, not form, in determining its regulatory framework, at least for disability access and other social policy objectives. Specifically, to the extent that IP-enabled services are used to achieve communications that are functionally similar to or provide a substitute for those achieved via traditional telephony services, the services – as well as the products that are used with them – should have mandates for accessibility. This should hold true regardless of the form (text, video, or voice) or the transmission media (PSTN, IP, wireless, cable, or satellite) that these communications travel over.

Moreover, in defining the functionalities that should be subject to accessibility obligations, the Commission should recognize that people with disabilities have, and will continue to benefit from, the use of text and video as conversational media, and will at

times employ a combination of two or all three of these formats, in their communications. The actual mandates for accessibility should ensure the redundancy of these modes. For example, where voice is used for a particular communication, deaf and hard of hearing people should have the option of using text. The converse – being able to use audio where there is ordinarily text – is equally critical to the blind community.

Finally, mandates need to be in place to require IP providers to help support telecommunications relay services and universal service programs. Without this financial support, there is a real threat to the viability of these vital services as telecommunication migrates to IP.

TABLE OF CONTENTS

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
IP-Enabled Services	)	WC Docket No. 04-36
	)	
_____	)	

Comments of the Rehabilitation Engineering Research Center
on Telecommunications Access

I. Introduction

The Rehabilitation Engineering Research Center on Telecommunications Access (RERC-TA) submits these comments in response to the Federal Communications Commission's (FCC or Commission) Notice of Proposed Rulemaking (NPRM) on services and applications making use of Internet protocol, including Voice over IP (VoIP) services.[1] The RERC-TA is a joint project of Gallaudet University and the Trace Center of the University of Wisconsin, Madison that is funded by the National Institute on Disability and Rehabilitation Research of the U.S. Department of Education.

The primary mission of the RERC-TA is to find ways to make standard systems directly usable by people with all types and degrees of disability, and to work with industry and government to put access strategies into place. The RERC-TA has previously submitted comments in response to numerous FCC proceedings on IP-related issues, including its proceedings on the application of Section 255 to IP telephony, the

[1] *In the Matter of IP-Enabled Service,* Notice of Proposed Rulemaking, WC Dkt. 04-36, FCC 04-28 (rel. March 10, 2004)

Commission's Section 706 inquiry concerning the deployment of advanced telecommunications capability to all Americans, and the Commission's wireline and cable broadband proceedings.

While the focus of these comments is on the use of the Internet for the purpose of conducting telephone-like conversational interactions, the FCC's NPRM also raises the matter of streaming video over the Internet.[2] Throughout the comments below, the RERC-TA takes the position that it is the function, rather than the form, of a service that should guide its regulatory treatment. We make the point that telephone-like services that mirror traditional telephony should receive the same regulatory treatment that traditional telephony receives today. Although we do not go into depth on the issue of streaming video in these comments, we do wish to state for the record that programming exhibited over the Internet – as compared with programming exhibited over broadcast, cable or satellite television services – should similarly be treated like the latter for purposes of requiring that programming to be accessible. Just as there is a need for access for television programming exhibited over more traditional television mediums, so too is there a need for disability access when such programming moves to Internet-based platforms. This approach is consistent with other actions that have already been taken by the Commission to ensure the continued accessibility of television programming as this medium migrates from analog to digital services.[3]

[2] NPRM at ¶1.
[3] See *In the Matter of Closed Captioning Requirements for Digital Television Receivers*, Report and Order, ET Dkt No. 99-254, MM Dkt No. 95-176, FCC 00-259 (released July 15, 1999), amending Part 15 of the FCC's rules.

II. IP-Enabled Services Offer Significant Advantages for People with Disabilities

The RERC-TA agrees with the Commission that the migration to IP-enabled services is already "characterized by explosive growth," and is likely to "transform the communications environment."[4] In fact, it is the extraordinary reach that these services are already beginning to have in our society that makes the need to ensure their access by people with disabilities, including older Americans, so important at this time. As these services permeate our homes, businesses, schools, and leisure activities, the advantages that they can offer to people with disabilities can level the playing field with their non-disabled peers and make it possible for more people to be independent of help from others; conversely, if the services and technologies are not accessible, they will impose ever-increasing barriers in daily living, employment, and education.

IP-enabled services use software-based solutions that can be tailored to meet individual needs. If developed early enough, inclusion of many, if not most, accessibility features in mainstream products will be readily achievable, and greatly contribute to the independence and productivity of Americans with disabilities. The following are just a few examples of the many benefits that IP-enabled technologies can offer to these populations:

1. Choice and Mixing of Conversation Modes. The ability to select from among many communication modes – voice, text, or video – enables users with disabilities who can perform some functions but not others to choose the telecommunication mode best suited to the needs and circumstances of their conversations. IP-enabled services have the capacity to also enable individuals to use multiple conversational modes during a single

conversation, and can even allow users to change modes mid-transmission, if needed to enhance accessibility. For example, someone who is older and cannot clearly hear what a doctor is telling him or her to do could push a button and switch to a text conversation or have the conversation captioned to accurately receive medical instructions. A person with a speech disability could similarly send text of a proper name or address when speaking to someone who otherwise understands his or her speech but cannot understand unfamiliar words. Such applications will rely on the ability of all users to move among such modes of communication and to mix them during a single conversation.

2. Video Communications for ASL and Audio-Visual Communications. IP-video is already revolutionizing communications for some people with disabilities. In March of 2000, the FCC approved video relay service, a service that enables consumers to use video links and sign language interpreters to communicate in sign language with voice telephone users.[5] These services already make use of high speed Internet services, enabling people with hearing disabilities whose first language is American Sign Language (ASL) the opportunity to enjoy telephone services that, as required by the Americans with Disabilities Act (ADA), are truly functionally equivalent to conventional voice telephone services. With video relay services, consumers can enjoy, for the first time in their lives, naturally flowing, real-time telecommunication with hearing people where they can catch not only the subtle nuances of what is said, but can laugh together, and interrupt each other when necessary. Similarly, broadband services coupled with IP video devices and software, permit point-to-point video communications among signing

---

[4] NPRM at ¶7.

[5] *In the Matter of Telecommunications Services and Speech-to-Speech Services for Individuals with Disabilities*, Report and Order and Further Notice of Proposed Rulemaking, CC Dkt 90-571, FCC 00-56 (2000).

deaf, hard of hearing, and hearing people who can now have natural telephone conversations that they previously were not able to have. Video communications are also potentially useful for people who are hard of hearing and use speech and hearing for communication – including a sizable number of senior citizens – as they allow users to see the lips and facial expressions of the speaker to better understand what is being said. Similarly, video communications can be useful to people who have speech disabilities but insufficient motor skills to type; their speech could naturally be augmented by visual cues such as facial expression, gesture, and the use of speech communication aids.

3. Two-Way Text Channels. At present, TTY communications are the principal means by which people who are deaf communicate by telephone over the PSTN. Although TTY technology offers a reliable method of text communication over analog networks, it has many limitations that need not be replicated with IP telecommunications. TTY users must purchase specialized customer premises equipment that has no other functionality, TTY transmissions are slow, and TTY technology uses a half-duplex mode, *i.e.*, users cannot interrupt each other during a conversation. So long as there is a PSTN, and until there is a functionally equivalent substitute for simultaneous text conversations over the Internet, the FCC needs to ensure access by TTY users. But the emergence of IP technologies could give people who are deaf, hard of hearing and speech disabled greater opportunities to have direct, real-time text conversation with people who do not have TTYs. Specifically, IP technologies can allow for the integration of voice and text in a way that enables any two parties who have screens and keyboards on their IP phones or other end-user equipment to use both text and voice as needed during conversations. If text functionality is integrated with voice functionality ("text everywhere"), it can permit

always-available *direct, real-time* telecommunications among deaf and hearing people without the need for TTYs or a relay service. The introduction of this type of service into homes and businesses can offer a way for deaf, hard of hearing, and speech-disabled people who use text for conversation, to migrate away from TTY technology and use any phone they encounter. It would permit the application of speech-to-text and text-to-speech in any conversation, because both modes (text and speech) could technically be supported within the same conversation. The ability to simultaneously transmit voice and text over IP networks would also facilitate voice carry-over (VCO) and hearing carry-over (HCO) services, enabling deaf, hard of hearing, and speech disabled individuals to communicate using text in one direction and voice in the other.[6]

4. Multimedia and In-Service Calls and Conferencing. Because of its flexibility, IP-enabled services could facilitate the use of multimedia calls, in which callers can be assisted by third parties (*e.g.*, interpreters, captioners, speech-to-speech assistants) on the same conference call. In addition, IP telecommunications opens up the possibility for individuals to be able to invoke services or assistance from third parties in the middle of a phone call, on an as-needed basis. For example, an individual might be in the midst of attempting to communicate with a 911 dispatcher by text, when the person realizes that the call is not being handled properly. In order to rectify the situation, the caller would be able to summon a relay operator (also called a communications assistant) to join the call. Similarly, individuals who are hard of hearing, who may be able to understand some people but not others, would be able to bring in assistance as needed. This particular

[6] VCO allows an individual with speech, but with hearing loss, to speak by phone directly to another party, and to receive text back through a TTY or a relay operator. HCO allows an individual with hearing, but with limited speech, to hear by phone directly from another person, and to send text back through a TTY or relay operator.

feature can result in decreased costs and increased privacy by allowing individuals to invoke assistance for just a portion or all of a call, as needed. Consumers would no longer need to turn to captioning or relay services for entire conversations just because they have occasional difficulty understanding others; now they would have the option of invoking captioning or relay services only during the specific times that they needed these services during a given call.

5. Adjustable Voiceband and Voice Quality – For many years, there has been talk of broadband access permitting enhancements to telephony audio, allowing people who are hard of hearing to select characteristics such as the frequency response and the amplitude of the communications that they are receiving by phone. IP-enabled services can for the first time offer these "on-demand" hearing selections, as long as the end-user equipment also supports it. Some IP telephony enterprise systems do have wideband codecs but they are not always used in businesses and organizations. The ability to choose wideband or other enhanced audio at any time is an important accessibility feature.

6. Virtual Assistive Technology – IP technologies, because of their networked character, have the potential for allowing individual phones to change their behavior to match the needs of their users. Moreover, this can be done without actually changing the phones themselves. For example, one company already has a program that can make many of the capabilities of its phones accessible to individuals who are blind without actually changing the hardware or software on the phone – while allowing the phone to behave in its regular mode for anyone else using that phone.

Similarly, a project at the University of Wisconsin would allow all of the phones in a single enterprise to easily and swiftly become text phones without making any

changes to the phones. Even if the phones were already shipped and installed, by simply changing the software on the central server, all of the phones would instantly become text conversation-capable. An individual who is deaf could go up to any of the thousands of phones in that enterprise and be able to carry on a text, or mixed voice and text conversation on the phone without needing any assistive technology (e.g., no TTY).

This ability to create or alter an interface on a phone at a user's request just by using software on a server or downloaded to the phone has the potential to allow IP-enabled phones to be much more flexible in order to meet the needs of people with a wide range of functional limitations. It can allow phones to be as complex as needed and yet still operate in a simple, straightforward and accessible fashion for people who are elderly. Access features that were not readily achievable or practical with older technologies can suddenly be straightforward and easy to deploy, as long as the basic elements to support this type of operation exist in the infrastructure. However, FCC action is required to cause this potential to be both realizable and implemented. Even where such features exist, they are currently not being included in standard packages or they are being delivered to users with the accessibility features turned off. When delivery occurs in this fashion, only system administrators, not the individuals who need these features, are able to turn them on.

7. Addressing Schemes – Because IP-enabled services rely so heavily on software solutions, they will be able to give individuals with disabilities the ability to customize their addressing schemes to better meet their needs. This may be especially useful for people with cognitive disabilities.

III. There are Many Potential Accessibility Problems with IP-Enabled Services

The need to formally mandate access to IP-enabled services is already evidenced by the following accessibility problems, some of which already exist, and some of which may arise with the introduction of IP-enabled services if there are no mandates to prevent them from occurring:

1. TTY Compatibility and Accessibility. Serious concerns have been raised about the extent to which VoIP technologies are accessible to TTY users. People who depend on TTYs for telephone communication will find that more and more of their calls are garbled and will not know why; people who want to abandon their circuit switched phone service for IP alone do not have a way to receive calls from those TTY users who do not have access to always-on IP service; and current TTY users who want to abandon their circuit switched phone service are not able to reach 911 by text at this time, not even via IP relay.

There are a number of TTY compatibility issues. First, a jack for the direct connection of an external analog device (and in particular a TTY) may be unavailable on the Internet phone in an office or home environment. Even if a connection can be made, there are still concerns about the extent to which the TTY transmissions can be effectively carried over IP-enabled services. Specifically, when audio signals such as speech and TTY tones are broken up into packets to travel over the Internet, some packet loss occurs. Minimal loss does not ordinarily create much of a problem for voice communications. The systems are engineered to tolerate as much packet loss as possible while not seriously affecting the voice quality as judged by (hearing) listeners. But TTY garbling occurs even at the low levels of packet loss and other transmission errors that are

acceptable for voice (e.g. 1-2% error rates). When this occurs, the incoming TTY messages can be unintelligible. Even in networks where packet loss is kept minimal under normal conditions, it can increase significantly when many people are on the phone at the same time. In that situation, common during emergencies, voice quality may be degraded but understandable, while TTY communication is likely to be impossible – just when it is critical to locate children or secure assistance. Compression technologies can also distort TTY signals.

Just as IP voice telephony products can talk to analog voice telephony products, IP text communications need to support compatibility with analog TTY products. Within the IP environment, there also needs to be a common protocol for text that is easily combined with other media. These two goals can be reached by using gateways and transcoding methods, but these have not been applied in the VoIP industry. Further, there is no coordination among the many standards-setting activities directed at these problems. Unless a clear path forward is determined through an FCC rule, interoperability and international harmonization on this issue are at risk.

There have been a number of documents generated around this problem in the past several years, by such standards bodies as IETF, ITU, and TIA.[7] One trend has been focused on the development of standards aimed at permitting Baudot and international text telephone protocols to be transcoded into a digital text conversation standard, T.140, and transported as text over IP. However, there is another competing standardization effort that is geared toward developing a specification simply for protecting TTY Baudot tones as they pass through IP telephony services. The danger of the latter approach is

[7] ITEF stands for International Engineering Task Force, ITU stands for International Telecommunications Union, and TIA stands for Telecommunications Industry Association.

that text telephony will continue to be treated as an audio signal with slow transmission and other limitations that carry over from its early origins. With this approach, it will not be able to be combined with audio and video in the same way as T.140 text. And it will require that there be a Baudot TTY at the termination – rather than being able to terminate in a standard IP device or to work internationally. The benefits of being able to send and receive text as data, discussed above – including the possibility of making text easily available on all calls – would not be possible with this approach. The real problem is that at present, there is no regulatory guidance to prevent this approach from becoming the default method. Also because companies can choose their compatibility method without regard to interoperability, in practice, the end result could be failure to support text telephony at all (with different parts of the system supporting different, incompatible text transport methods). There are also dangers associated with treating text, even in a digital/IP format, at a lower level of "Quality of Service" (guarantee of passage without interruption) compared to voice. In times of heavy network usage, such as emergencies, text calls could be dropped long before voice calls are, unless safeguards are in place.

It is clear that the FCC needs to develop rules to govern the handling of TTY compatibility and its evolution to other text-based communications services, and to ensure that text has equal priority with voice in emerging networks and services. History has shown that there are many standards on accessibility features in the telecommunications industry, but only those that have been required by the FCC have actually been implemented in products. FCC involvement ensures that standards are strong enough to provide accurate and interoperable transmissions. In short, unless there

are mandates in place to guarantee compatibility, there is nothing to prevent the proliferation of incompatible solution strategies by different segments of the industry from occurring.

2. Hearing Aid Compatibility. The Hearing Aid Compatibility Act of 1988 requires all telephones to be compatible with hearing aids. The FCC has very strict rules requiring wireline and some wireless telephones used with the PSTN to be hearing aid compatible. Newer types of equipment used to access IP-enabled voice communication services must similarly be accessible by people who use hearing aids and cochlear implants.

3. Call Signaling. Essential to interpersonal telecommunication is the ability to signal to another person that "I'm calling you." Today an individual who uses a TTY on the PSTN or an analog port on a PBX can simply hook up a flashing ring indicator to a telephone line to be alerted to incoming calls. IP-enabled services need to be constructed so that they can similarly activate a visual signal – or vibrating signal if the application is worn – for people who cannot hear rings and message announcements. The signaling needs to be provided not just on the device screen as text and/or graphics, but in a vibrating form for wireless devices and a flashing or other effective visual form outside the device, comparable to the flashing ring signal used in telephones (so that a person does not have to be looking directly at a phone to notice that it is ringing). Currently many IP-enabled products do not include the software needed to activate an external flasher or other signaler. This is already a problem for deaf and some hard of hearing people receiving IP calls. If this is not corrected as these technologies are developed, it can become a more serious problem. A related issue is *distinctive* signaling: if unique signals are used to distinguish various types of messages (e.g., short messaging, voice

mail, e-mail) from live calls, the disabled user needs to have access to these distinctions. Signaling that is provided only in audio needs to be visual or vibratory.

4. Speech Quality. Speech compression is commonly used in IP-enabled transmissions as a means for achieving efficiency and cost savings. But people who are hard of hearing, especially those with severe hearing loss, may find it more difficult to understand speech that has been greatly compressed. Packet loss effects and packet loss concealment solutions may also have a more adverse effect on hard of hearing people than on hearing people. And if speech quality is lower with some IP telephony applications, the use of these applications could also present a problem for people who have a difficult time making their speech understood by others. This would include people with speech disabilities, as well as people who are deaf or hard of hearing and who use voice carry-over.

5. Electronic Interfaces. As traditional telephony is replaced by IP-enabled services, many applications will increasingly come to be available through computers, smart phones, PDAs, and other electronic devices. Interfaces to these services are often provided through graphical, touch screen, or "soft-button" interfaces which may not be accessible to people who are blind and visually impaired. This type of interface is commonly found in enterprise systems, where the employee with a disability often has no alternative way to access the interface. Where IP-enabled service providers assign functions and controls to one physical ability – e.g. hearing, eye-hand coordination – they need to provide redundancy in modes – i.e., assign those functions and controls to other senses or abilities – to avoid creating new barriers for people with vision and/or hearing disabilities. Of particular concern is increased reliance on the aforementioned "soft

buttons" and touchscreens. Soft buttons are buttons which appear along the edge of a display and which do not have any set function. The functions of the buttons are dynamic: they may change with each press of a button. As a result, an individual who is blind may not know what the function of these buttons is from one minute to the next unless some other form of access is provided. Touchscreens pose two problems: (1) the individual cannot feel *where* the buttons are and (2) he or she cannot identify *what the buttons do* because they change from one minute to the next as the screens change.

In addition to the above, when designing interfaces, providers need to ensure compatibility with assistive technologies, ensure access by individuals with manual dexterity limitations, and develop ways to make the interfaces sufficiently easy to understand for individuals with cognitive disabilities.

6. 7-1-1 Relay Access. In July of 2000, the FCC adopted a rule requiring all common carriers providing telephone voice transmission services to provide access to relay services throughout the United States via 7-1-1 dialing.[8] Prior to this mandate, there were more than 100 relay access numbers throughout the country. As a consequence, relay users were forced to undergo the difficult task of finding the correct number each time they traveled to a new state. The difficulty associated with this undertaking discouraged many individuals, and especially hearing individuals, from using relay services. After 7-1-1 was implemented, relay administrators reported significant increases in the use of relay services by both deaf and hearing individuals. Importantly, hearing individuals appeared far more willing to return calls made to them by deaf, hard of hearing and speech disabled relay users. Where IP technologies are used as a substitute for traditional

[8] *In the Matter of The Use of N11 Codes and Other Abbreviated Dialing Arrangements*, Second Report and Order, CC Dkt No. 92-105, FCC 00-257 (rel. August 9, 2000).

telephony, it is critical for IP providers to similarly provide 7-1-1 relay access, lest the benefits bestowed by this national number disappear.

7. Access to Emergency Services – At present, there are various federal laws intended to facilitate access to emergency services by people with disabilities. Title II of the ADA requires 911 centers to accept TTY calls with accuracy and swiftness, and the FCC's own E-911 rules specifically mandate TTY wireless access to public safety answering points (PSAPs). The methods by which individuals with disabilities will be able to access emergency services in an IP-enabled environment need to be considered *before*, not after IP technologies replace traditional voice telephony. The RERC-TA believes that there should be little debate in response to the FCC's query as to how the Commission should weigh the public benefits of requiring emergency access against the risks that such mandates could slow down technical and market development of IP services.[9] Individuals who use TTYs or hearing aids have already witnessed, first hand, what happens when an industry is permitted to deploy its products and services without first considering disability and emergency access issues. It took enormous resources to make digital wireless services backward compatible with TTYs because of the failure to consider compatibility with TTY devices prior to the time these services were first developed. And to this day, hearing aid users *still* do not have access to the vast majority of digital wireless telephones. This is especially troubling given the frequency with which Americans use their digital phones in emergency situations. If the FCC truly wishes to "avoid a scenario in which a decision to impose E-911 requirements at a future date would require costly and inefficient 'retrofitting' of embedded IP infrastructure,"[10] it

[9] NPRM at ¶53.
[10] NPRM at ¶57.

needs to act quickly to implement and enforce these requirements for emergency access now. Internet-based telecommunications systems must be able to convey location information of callers to PSAPS. Currently deaf and hard of hearing users of Internet text relay and VRS cannot use these services for 911 calls. The FCC has waived these services from the requirement to handle 911 calls because of the problem of location identification with IP technologies. This problem must be solved soon as some people who have broadband service are beginning to abandon POTS service and will not have access to 911.

8. Advanced IVR – The FCC's Section 255 rules require interactive voice response systems typically provided over the PSTN to be accessible by people with disabilities. In the future, interactions with live sales and customer service personnel will continue to be replaced by voice operated databases, which will function as and become indistinguishable from live personnel. As these computerized two way voice systems proliferate, mandates should be in place to ensure that they are similarly accessible.

IV. IP-Enabled Services Must be Both Usable and Interoperable for People with Disabilities

1. Guidelines for User Materials of IP-Enabled Services – Just as it is critical to require access to IP-enabled services, so too will mandates be necessary to ensure that people with disabilities are able to "use" these services. More specifically, the FCC's Section 255 rules incorporate specific guidelines requiring telecommunications carriers to provide accessible product information, including user and installation guides, and accessible technical support services, including consumer hotlines, repair and billing services. When IP technologies replace traditional telecommunications networks, it will be necessary to similarly mandate accessible user guides, customer support centers, and

other forms of consumer assistance to facilitate the use of IP-enabled services. In addition, in the future, we may not have directory assistance services in their current form. As other ways of providing the general public with information about how to contact each other emerge, these new methods – more than likely to be IP-based – will also need to be accessible by people with disabilities.

2. Interoperability – As new providers enter the IP arena in their individual quests to improve and expand upon our nation's communications networks, each is likely to independently introduce an array of services designed to win over consumers. But in the effort to get a jump on the marketplace, some companies may ignore the need to make their products and services interoperable with those of their competitors. The result can be confusion and disorder for consumers, especially those with disabilities, who may find they are able to contact some individuals over a service they have purchased, but not other individuals from that very same service. The deaf community has already seen this occur with respect to instant messaging, and to some extent, video relay services. As consumers with disabilities become increasingly dependent on IP-enabled technologies that cross various transmission methods and providers, it is critical for the FCC to have in place mandates that require providers to make their networks and equipment interoperable with other networks and equipment providing the same function. Just as today's telephone system over the PSTN provides seamless communications for all Americans, so too should the IP-based communication networks (including video relay services) of the future be seamless for its users. This will be especially important for national security reasons. All Americans need the confidence of knowing that in the

event of an emergency or national crisis, they will be able to contact necessary authorities and locate loved ones, regardless of the networks that they use.

V. Market Forces are Insufficient to Protect Disability Interests

The Commission suggests that as communications services migrate from networks that presently rely on incumbent, monopolistic providers to an environment where providers are competing much more freely over platforms and applications, the power over the prices and terms of these services will likely shift from providers to users.[11] Along these lines, the Commission speaks of a "virtual cycle," in which "competition begets innovation, which in turn begets more competition."[12] The result for the general public, the Commission suggests, will likely be greater flexibility, including the ability to design communications that suit individual needs over networks and with devices of one's own choosing. Fortunately, the Commission itself appears to recognize the limitations that such a market-driven approach will have for people with disabilities. That competition in the area of IP-enabled services is unlikely to deliver the same "highly customized, low-cost suite of services" to people with disabilities that are delivered to the general public is borne out by numerous historical events that have occurred in the field of telecommunications.[13] These events have proven, time and again, that the mere proliferation of a particular service through competition in the marketplace is insufficient to take the place of regulation to safeguard the interests of people with disabilities. For example, in the 1970s, the introduction of Trimline phones, new payphone receivers, and lighter, cheaper imported phones that no longer emitted strong magnetic impulses threatened to all but eliminate telephone access for hearing aid users. In the 1980s, the

[11] NPRM at ¶36.
[12] NPRM at ¶22.

increased use of graphical interfaces for computers – heartily welcomed by the general public – nearly confiscated the access to text documents that people with vision disabilities had been enjoying through their screen readers. And the explosive growth in digital wireless telephone services that occurred in the late 1990s was of no benefit to deaf and hard of hearing consumers, whose previous ability to successfully use mobile telephone services was taken away with the switch from analog to digital.

There are various reasons why market forces alone have never been adequate to guarantee equal or timely access to telecommunications services by people with disabilities. Although they are a large segment of the population, when viewed as separate markets, people with disabilities are quite fragmented in terms of their need for accessibility features; because there are so many types of disabilities, it is difficult for any one small disability group to create enough pressure to influence market trends. In addition, statistically, individuals with disabilities as a group generally earn far lower incomes than the general public. Lower incomes mean fewer spending dollars to impact competition. Finally, individuals with disabilities are often deterred from purchasing mainstream communications products and services because they need, but cannot afford, expensive adaptive equipment to make those products and services work for them.

It is precisely the failure of the marketplace to respond to the needs of people with disabilities that has prompted Congress, on numerous occasions, to pass remedial legislation to safeguard the telecommunications interests of people with disabilities including those who are older. This began with the Telecommunications for the Disabled Act of 1982, the first piece of legislation to recognize the problems associated with relying on market forces as a means of ensuring telephone access by people with

[13] See NPRM at ¶5.

disabilities.[14] In 1982, Congress understood that while the deregulation of conventional telephone equipment would lower prices on telephones and other devices used by the general public, it would have the opposite effect on equipment used by people with disabilities. At issue was the FCC's Computer II ruling, prohibiting the Bell operating companies from subsidizing the sale of their equipment with revenues from their regulated telephone services. Prior to Computer II, AT&T's local operating companies had been subsidizing the research and development of TTYs and other specialized customer premises equipment (CPE) used by people with disabilities with revenues that came in from their provision of these local telephone services. Through cross subsidization, the telephone companies were able to keep down prices for these specialized devices. Consumers with disabilities feared that after the Computer II ruling, they would be forced to pay the full, exorbitant prices of that equipment.

Responding to the Commission's plans to rely on competition to maintain the costs of telephone equipment, Congress said:

> For most ratepayers, deregulation may indeed ensure a competitive market in telephone sets and eliminate subsidies for such sets from local rates. For the disabled, however, the ban on cross-subsidization could mean unregulated price increases on the costly devices that are necessary for them to have access to the telephone network."[15]

Because Congress believed that the costs to society of losing access to the telephone network were much greater than the costs of subsidizing products and services,[16] it authorized states to continue allowing such subsidies to take place with respect to specialized CPE used by people with disabilities.

[14] P.L. 97-410, codified at 47 U.S.C. §610.
[15] H. Rep. No. 888, 97th Congress, 2d Sess. at 3.
[16] *Id.* at 12.

The Hearing Aid Compatibility Act's requirement for phones that are accessible to hearing aid users,[17] the ADA's requirement for relay services,[18] and both the Telecommunications Accessibility Enhancement Act's[19] and Section 508 of the Rehabilitation Act's[20] requirements for access to federal telecommunications and information systems all reflect the recognition and understanding that market forces on their own cannot bring about access needed for people with disabilities to lead independent and productive lives. That Congress has understood the need for disability safeguards even amidst efforts to achieve deregulation within the telecommunications industry is also reflected by the inclusion of Section 255 in the Telecommunications Act of 1996.[21] Notwithstanding the emphasis of that Act on deregulation, Section 255 imposed *new* mandates on the telecommunications industry, in the interest of ensuring that people with disabilities would have these much needed protections.

In its Second Report on high speed Internet access, the Commission also acknowledged that market forces may not be enough to guarantee timely access to broadband services for Americans with disabilities.[22] That report identified persons with disabilities as a category of Americans "who are particularly vulnerable to not having access to advanced services."[23] Similarly, in its Third Report assessing the deployment of high speed services, the Commission acknowledged that individuals with disabilities may face "significant impediments" with respect to gaining access to broadband

[17] P.L. No. 100-394, codified at 47 U.S.C. §610.
[18] P.L. No. 101-336, codified at 47 U.S.C. §225.
[19] P.L. No. 100-542, codified at 40 U.S.C. §762..
[20] P.L. 105-220, Title IV, §508(b), codified at 29 U.S.C. §794(d),
[21] P.L. No. 104-104, codified at 47 U.S.C. §255.
[22] *Deployment of Advanced Telecommunications Capability to all Americans in a Reasonable and Timely Fashion*, Second Report, CC Dkt. No. 98-146, 15 FCC Rcd 20913 (2000) at ¶234.
[23] *Id.*

services.[24] The Commission included the lack of accessible equipment, content and software among the many factors that may be impeding such access.

The failure of the market to safeguard the interests of people with disabilities has also prompted the Commission to take regulatory action to ensure that disability protections are maintained. For example, although in November of 2000, the Commission revised its Part 68 rules to eliminate its technical criteria and oversight of customer premises equipment connected to the public switched telephone network, it retained those sections of Part 68 that pertain to disability access. The Commission explained that its Part 68 rules on hearing aid compatibility and volume control are "intended to ensure that individuals with hearing and speech disabilities have access to telecommunications services in a manner functionally equivalent to someone without such disabilities," and that retention of these rules would "ensure that the Commission is able to continue monitoring and enforcing compliance with [the] requirements . . . directed by Congress in Section 255 of the Act."[25]

We applaud the Commission for again acknowledging, in the instant proceeding, the need to apply regulatory measures as our nation's communications migrate to IP-enabled services.

VI. Mandates for Accessibility Need to Ensure Access to Both IP-Enabled Services and Equipment

Given the failure of the competitive marketplace to ensure disability access, the only way that people with disabilities will truly reap the benefits of IP-enabled services is if the FCC adopts mandates that require service providers to provide that access. These

[24] *Deployment of Advanced Telecommunications Capability to all Americans in a Reasonable and Timely Fashion*, CC Dkt. No. 98-146, Third Report, FCC 02-33 (2002) at ¶103.

mandates must extend both to the IP-enabled services themselves and to the equipment used to access those services. Universal access to equipment is needed not only to enable consumers to purchase accessible devices for their home use; it is equally important that these individuals be able to use IP devices in their places of work, hotels, and other locations to which they might travel. This will be especially critical in emergency situations, where individuals do not have the ability to select among devices, but rather must be able to operate the phones they encounter.

As the FCC notes, analysts predict that IP-enabled services of the future will be offered over new devices that do not fit squarely within our current image of a telephone or computer.[26] The FCC describes a plethora of possible applications for IP-enabled services that will be accessed from a great variety of electronic and home appliances, previously not even considered to be communications equipment.[27] Increasingly, we are going to see a continuum of products – personal digital assistants, televisions, cameras, and even medical devices – that are capable of transporting conversation. There will be no clear breaks in this continuum and at times, it will be difficult or even impossible to determine where a telephone-like product begins and where it ends.

It is for this reason that the RERC-TA urges that if a device or service permits communications, that device or service be considered within the realm of products and services that are guaranteed to be accessible by people with disabilities, regardless of whether that item has historically been classified in a particular way.

---

[25] *In the Matter of 2000 Biennial Regulatory Review of Part 68 of the Commission's Rules and Regulations*, Report and Order, CC Docket No. 99-216, FCC 00-400 (Nov. 9, 2000) at ¶66.
[26] NPRM at ¶16.
[27] NPRM at ¶¶ 17-21.

VII. Incorporating Access Needs to be Done at the Design Stage to Avoid Expensive and Burdensome Retrofits

One thing that is most encouraging about VoIP and other IP-enabled technologies is that these technologies make it easier to implement accessibility than had been possible with many previous telecommunication technologies. Because IP technologies are largely software based, they offer considerable flexibility. Small changes to this software can often bring full access rather easily, without impacting price or functionality for other users. Virtual assistive technology, discussed above, offers one such example of this point. And once implemented, most, if not all accommodations made are likely to benefit large numbers of individuals without disabilities, the same way that closed captions – originally intended for use by people with hearing disabilities – are now enjoyed by members of the general public in bars, exercise facilities, and airports. As the FCC is aware, it will be far easier to incorporate accessibility measures if they are implemented now, at a time when these services are first being designed and developed. The failure to consider these access needs during these early stages in their deployment will result in inaccessible services that will be burdensome and expensive to retrofit at a future date and time.

VIII. IP Services Should be Categorized Based on Their Functionality

The Commission seeks comment on the appropriate legal classifications of various categories of IP-enabled services. Among other things, the Commission asks about the extent to which various services should be classified as telecommunications services or information services.[28] The RERC-TA is concerned that the classification of IP-enabled services into either of these categories is inappropriate, and could result in eliminating

[28] NPRM at ¶43.

protections for people with disabilities as well as creating confusion and ambiguity for consumers, product developers and even regulators. As the Commission notes, IP services of the future will likely integrate voice, video and data capabilities in a way that makes it increasingly difficult to distinguish among these various services. And as noted above, the integration of IP-enabled services into various types of home devices will continue to blur characteristics of the equipment used to access these services.

Artificially separating IP-enabled services into each of these categories based on the underlying technology alone would not only cause serious accessibility gaps but also lead to much confusion for consumers and a very uneven playing field for companies who may be providing nearly identical services over different transmission protocols. Not knowing the extent to which one could expect to have access, and not knowing the extent to which access must be provided, consumers and providers would be left in the dark as to where accessibility begins and where it ends. If the FCC continues to carve up what are becoming indistinguishable communications functions into these artificial categories, services with virtually identical functions may or may not have to be accessible, depending solely on the technology used to carry them or the networks used to interconnect them. One could envision a situation where the products or services during one part of a conversation were covered but where coverage stopped before the conversation could be completed. For example, companies are now developing phones that can change from cellular operation to WiFi operation as an individual enters a building or a home. If regulatory coverage were based on distinguishing telephony from information services, phone calls could switch from telecommunications services to an information services as people walked from their cars into their houses – and become

inaccessible. Unless assured that products and services throughout an exchange are covered by the FCC's disability protections, people with disabilities will not be able to initiate calls or make connections to their destinations with any degree of confidence. Indeed, this issue has already arisen even with the installation of automated attendant systems – systems that are generally not accessible by people with disabilities – that have been installed in front of millions of telephone numbers.

The FCC recognizes that "the nature of IP-enabled services may well render the rationales animating the regulatory regime that now govern communications services inapplicable here, and that the disparate regulatory treatment assigned to providers of 'telecommunications services' and 'information services' might well be inappropriate in the context of IP-enabled services."[29] The RERC-TA agrees, and maintains that previous interpretations of these statutory terms – interpretations which date back to the Computer Inquiry rulings that began in the 1960s – have become obsolete and are ill-suited to the Commission's attempts to create a regulatory scheme that meets the needs of today's advanced technological society.[30] The RERC-TA believes it is time for the Commission to discard its original delineations – ones which were based on a change in the form and content of the information sent and the underlying transmission method – and to replace those delineations with a test that is based on the functionality of the service at issue – at least for disability access and other "stated public policy goals."[31]

Specifically, the RERC-TA urges the application of disability protections to a newly defined class of services – one which is premised not solely on the PSTN nor the Internet – but which turns on the extent to which it is intended to enable individuals to

[29] NPRM at ¶45.
[30] See NPRM at ¶25 n. 82

communicate with one another, in a manner that substitutes for and builds upon the functions of traditional telephony. The definition should be one that includes simultaneous, instantaneous communications characteristics of traditional telephony, but which encompasses paging, text messaging, and other text or video services that may already be covered under Section 255. The definition adopted must also be broad enough to encompass enhanced functionalities or use of a provider's centralized server if needed to facilitate disability access. Protocol conversion that enables TTY formats to be compatible with IP-borne formats – through a provider-supported transcoding server and gateways to other systems – is one example. In other words, if there is a server that provides a functionality similar to the relay service – i.e., converting one format to another without changing the content, then it should not be excluded from the category of services that are covered by the Commission's accessibility rules.

One needs only to look at the limitations of Section 255 of the Communications Act – a provision that is worded to cover the accessibility of "telecommunications services and products" – to conclude that the outdated distinction between these services and information services makes little sense in today's technologically advanced society. The "telecommunications" category of services subsumed in Section 255 did not even cover interactive voice response systems or voice mail, two services that are virtually ubiquitous in telephone communications and required to complete many calls to businesses and governmental offices. Rather, as discussed below, the Commission had to use its ancillary jurisdiction in order to pull these services within the reach of Section 255.

---

[31] NPRM at ¶42.

If the term "telecommunications services" continues to be interpreted as narrowly as it has in the past by the FCC, the disability community will once again be left behind when innovative IP services are rolled out to the general public. If, on the other hand, a service is covered by the Commission's disability rules to the extent that the functions of that service enable individuals to converse with one another, in a manner that parallels – though is not necessarily identical to – traditional telecommunications services, individuals with disabilities will be confident that the providers of these services will have an obligation to ensure the accessibility of their offerings. Importantly, providers will also have confidence about which services are covered and can proceed to build access in from the beginning where it is easiest, without fear that their competitors will ignore their own obligations to do so.

It is important to recognize that in defining the functionalities that should be subject to accessibility obligations, the Commission should not limit itself to traditional methods of conveying conversations. For most of the twentieth century, telephone conversations took place via voice, and consequently remained inaccessible to people with hearing disabilities. Newer technologies enable parties to have their choice of conversational mode – voice, text or video. The only difference between these conversations and the traditional voice communications of the past is that now users have the opportunity to communicate in a form that best meets their access needs, whether that be voice, text or video of a combination thereof.

IX. The Commission's Treatment of IP-Relay Services Should Generally Guide its Regulatory Policies for IP-Enabled Services.

The Commission has already used a functional definition of communications services to cover at least one form of IP text communications under Title II of the

Communications Act. Specifically, in April of 2002, the Commission adopted an Order defining IP relay as a form of telecommunications relay service under its Title II relay rules.[32] IP relay services enable people with hearing and speech disabilities to connect with a relay operator (communications assistant) via an Internet site, rather than with their TTYs. Current practice is to have the operator complete the call to the third party over the public switched network.[33]

Under the ADA, telecommunications relay services are defined as "telephone transmission services that provide the ability for an individual who has a hearing impairment to engage in communication by wire or radio with a hearing individual in a manner that is functionally equivalent to the ability of an individual who does not have a hearing impairment or speech impairment to communicate using voice communication services by wire or radio."[34] In deciding to authorize IP relay, the Commission chose not to look at the form of these communications. Instead, the FCC appropriately determined that the term "telephone transmission services" in the relay section of the Communications Act could be interpreted to include "all transmission using telephonic equipment or devices, whether over the public network, cable, satellite, or any other means, so long as the requisite functionality is provided."[35] The Commission then defined the requisite functionality as two way communication between people with hearing or speech disabilities and people without those disabilities. By considering the functionality, rather than the form of the transmission method, the Commission facilitated

[32] *In the Matter of Provision of Improved Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities*, Declaratory Ruling and Second Further Notice of Proposed Rulemaking, CC Dkt No. 98-67, FCC 02-121 (April 2002) (IP Relay Ruling).
[33] In the future, it is likely that the operator will use a VoIP connection for this outbound leg of the call.
[34] 47 USC ¶225(a)(3).
[35] IP Relay Ruling at ¶11.

the provision of a service that now fulfills the underlying purpose of the ADA to expand telecommunications access, as well as the Commission's goal of expanding the use of broadband technologies. The Commission's forward-looking thinking has brought an IP-enabled relay service to callers that allows them to set up calls efficiently, conduct conference calls, browse websites during calls, and enjoy the mobility afforded from being able to use a variety of devices, including computers, handheld devices, Web-capable telephones, and other Internet-enabled devices.

The FCC asks how its interpretations in the IP relay proceeding should inform its deliberations on the appropriate regulatory treatment for IP-enabled services.[36] The RERC-TA believes that these interpretations should in fact, be applied in the instant proceeding. The FCC's IP relay ruling is consistent with the intent of Congress – as evidenced by two decades of federal legislation requiring telecommunications access – to take policy actions that ensure that individuals with disabilities have an equal opportunity to benefit from advanced and innovative methods of achieving communications. We suggest that where IP-enabled services are used to achieve communications that are functionally similar to those achieved via traditional telephony services, the accessibility of those services, as well as the products that are used with them, should have mandates for accessibility, regardless of the form (text, video, or voice) or transmission media (PSTN, IP, wireless, cable, or satellite) that these communications take.

X. The Regulatory Treatment of IP-Enabled Services Should be Determined by the Extent to Which These Services are Similar to or a Replacement of Traditional Telephony.

In its NPRM, the Commission asks commenters to provide feedback on specific categories that may be used to determine the regulatory treatment of IP-enabled services.

In light of the above discussion, the RERC-TA offers the following commentary on each of these categories:

1. **The extent to which a particular IP-enabled service is functionally equivalent to traditional telephony.**

As noted above, the RERC-TA maintains that to the extent that an IP-enabled service is functionally equivalent to traditional telephony, providers of that service should be required to make the service accessible by people with disabilities and to participate in relay service funding. The RERC-TA agrees with the Commission that as IP-enabled services proliferate, consumers – with and without disabilities – will have the expectation of being able to access certain services, to the extent that those services perform the same functions as were performed by traditional telephony. This holds true especially for senior citizens. Advanced years often bring with them functional limitations that require accommodation to reduced vision and hearing. Having the ability to contact someone in a remote location via a telephonic device or its equivalent can provide the only lifeline available to these older Americans. As our nation rapidly ages, we need to ensure that VoIP and other IP-enabled technologies will allow senior citizens to continue having the communications access to which they have grown accustomed – even as the technologies used to provide communication change and these individuals are required to switch to the new technologies.

2. **The extent to which a particular service can provide a substitute for traditional telephony.**

The RERC-TA believes that using this distinction is also an appropriate one with respect to determining the scope of IP-enabled services that must be regulated and the imposition of obligations to contribute to relay services support. But the Commission

[36] NPRM at ¶59.

needs to recognize that text and video, or a combination thereof can provide substitutes for traditional telephony. As noted above, the very same messages can be conveyed in text or video that can be conveyed by voice. Moreover, many individuals are simply unable to communicate by voice. This is again consistent with the FCC's rulings in the relay context, where the Commission has approved not only conventional text-to-voice relay services, but video relay services as well.

3. The extent to which the service interconnects with the PSTN and/or utilizes telephone numbers administered by the North American Numbering Plan.

The RERC-TA opposes this distinction as a means of determining regulatory treatment for IP-enabled services. The concept of the PSTN is not something that consumers understand and it is usually impossible for end users to have any idea of how their conversations are traveling. As communication services shift to the Internet, the use of telephone numbers as we now know them may similarly be discontinued. The Commission should not hinge regulatory treatment on what soon may be these outdated technologies and procedures. This approach would invite companies to create either technical or legal mechanisms to isolate their systems from the PSTN and thus escape coverage. It will also lead to greater confusion and argument as technologies further evolve.

The RERC-TA asks the Commission to make clear, however, that to the extent that traditional telephone service providers are in fact using the PSTN for portions of their transmissions, they are already covered by Section 251 of the Communications Act, which prohibits telecommunications providers from installing features, functions and capabilities in their networks that do not comply with the Section 255 guidelines.

4. The extent to which the service offers "disintermediated" direct peer-to-peer communications among end users and those that rely on a provider's centralized server. More specifically, the Commission asks about distinguishing between services that simply facilitate peer to peer voice communications between end users and services sold to consumers as a dedicated voice network offering enhanced functionality.

The RERC-TA does not believe that regulatory treatment of IP-enabled services should turn on this distinction. This could quickly lead to companies repackaging or separating functions to avoid coverage – or to services not being available that are required to make a phone call or its equivalent. One can easily imagine a scenario where the peer to peer connection capability is included as part of an operating system and the 'connection services' are the only thing that a person pays for, but where these services are necessary to complete phone calls (except those calls that can be accessed through the individual's "speed-dial" list with stable IP addresses). The distinction at issue is based too much on viewing future telecommunications as being organized and operated like today's services, an unlikely scenario given the magnitude of the changes being made.

5. The FCC asks about use of a layered model that distinguishes regulation based on a) the underlying transmission facility, b) the communications protocols used to transmit information over that facility, and c) the applications used by the end user to issue and receive information.

The RERC-TA does not believe that the FCC should base its regulatory distinctions on the above categories. As noted above, we believe that the primary distinction of whether or not a service should be regulated by the FCC should turn on functionality, not on transmission facilities, communications protocols or the specific applications needed by the end user to send or receive information. Reliance on these distinctions would result in regulatory uncertainty and consumer confusion. As pointed out above, it could even lead to a phone call changing from being classified as telecom to non-telecom as a

person walks toward his or her house and the phone switches from cellular operation to WiFi operation.

6. Other distinguishing factors - e.g., a) whether the service uses the Internet; b) whether it is used as the primary line or supplements the existing telephone line; c) whether it is phone-to-phone or computer to computer; d) whether it uses a wireline, wireless, cable or satellite platform.

For the same reasons given above, the RERC-TA opposes use of these distinguishing factors to determine the Commission's regulatory policy. Whether or not a service uses the Internet will not make a difference to a consumer who simply wishes to convey information from one person to another. Often consumers will not even know whether or when a provider or their phone is even using Internet facilities to complete what the consumer may perceive to be a traditional telephone call.

The primary line distinction is not valid and should also not be used as a basis for determining regulatory coverage. Many people are already obtaining or keeping a low cost local POTS line only for emergency use, and their Internet connection, with its low long-distance calling advantages and bandwidth, is their primary "line."

Distinctions based on whether a call is phone to phone, computer to computer, or is made over a wireline, wireless, cable or satellite platform are also artificial distinctions that have no place in a society that uses advanced broadband technologies for communication. Use of multiple platforms for communications will continue to grow, blurring these distinctions for consumers. Indeed, it is just a matter of time before IP-based networks evolve into single integrated systems that together carry both our communication and information services and that permeate our businesses, schools, homes and lives in the same way that electricity does today.

As emphasized above, the deciding factor for whether to regulate a particular service should turn on its function, not its form or its transmission path.

XI. The Commission Has Authority Under Title I to Ensure that People with Disabilities Have Access to IP-Enabled Access Services.

The Commission seeks comment on the bases for asserting jurisdiction over IP-enabled services.[37] The RERC-TA maintains that there are at least two bases for the FCC to assert its authority over these services for the purpose of ensuring access by people with disabilities.

1. **Universal Service**

Long before the Telecommunications Act of 1996's emphasis on the provision of universal telephone service for schools, libraries and rural communities, Congress regularly relied on the FCC's universal service obligation – as contained in section 1 of the Communications Act – to require communications access by people with disabilities. The universal service obligation mandates the Commission to "make available, so far as possible to all the people of the United States . . . a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities at reasonable charges . . . "[38] It is this obligation upon which Congress has consistently relied, and under which the Commission has consistently exercised its statutory duty, to ensure that individuals with disabilities are included in the benefits of modern telecommunications.

Reliance upon the universal service doctrine to require disability access first began with the 1982 Telecommunications for the Disabled Act, discussed above. There, Congress concluded that if people with disabilities were unable to afford the purchase of specialized customer premises equipment, they would lose access to telephone services.

[37] NPRM at ¶40.

This, the Legislature explained "would disserve the statutory goal of universal service [and] deprive many individuals of the opportunity to have gainful employment."[39] The costs of losing that access, Congress ruled, far exceeded the costs of allowing telephone companies to continue subsidizing the price of telephone equipment through their general revenue requirements.

Six years later, when Congress enacted the Hearing Aid Compatibility Act (HAC Act), it again relied on the universal service mandate, this time to expand hearing aid compatibility obligations first created in the 1982 Act. The House Committee approving the HAC Act explained: "Our nation's public policy goal is equal, universal telephone service for all Americans. This legislation endeavors to ensure that all hearing impaired persons will have complete access to the telephone network."[40] It also concluded,

> [u]niversal compatibility and equal access by the hearing impaired to the telephone network follow from the [universal service provision of the] Communications Act of 1934. . . Advances in technology have made communication possible and it is time that hearing impaired persons are include in 'all the people'"[41]

Congress's requirements for both federal relay services, as required by the Telecommunications Accessibility Enhancement Act and nationwide relay services, as mandated by Title IV of ADA, also rested on its commitment to fulfill the universal service obligation. In fact, the language of Title IV itself incorporates the universal service mandate. Section 225((b)(1) states:

---

[38] 47 U.S.C. §151.
[39] H. Rep. No. 888, 97th Congress, 2d Sess (1982) at 3-4.
[40] H. Rep. No.674, 100th Cong., 2d Sess (1988) at 3.
[41] *Id.* at 6.

> *In order to carry out the purposes established under section 1, to make available to all individuals in the United States a rapid, efficient nationwide communication service*, and to increase the utility of the telephone systems of the Nation, the Commission shall ensure that interstate, and intrastate telecommunications relay services are available, to the extent possible . . .” (emphasis added)

That the Commission has both the authority and the obligation to utilize the universal service mandate to ensure disability access to IP-enabled services and equipment is firmly established by the above laws and their legislative histories. As our nation moves to more advanced services, the failure to ensure access by people with disabilities would have the unintended consequence of leaving these communities behind, eliminating the independence, integrity, and other gains achieved by the above statutes. We urge that as the Commission moves forward in setting its IP-enabled service policies, it uphold the past two decades of Congressional efforts to ensure full access to our nation’s communications systems.

2. Ancillary Jurisdiction

The second legal basis that the FCC can use to exercise jurisdiction over disability access issues in an IP-enabled environment is its ancillary jurisdiction. As the FCC notes, Title I of the Act confers upon it “ancillary jurisdiction over matters that are not expressly within the scope of a specific statutory mandate but nevertheless necessary to the Commission’s execution of its statutorily prescribed functions.”[42] The Commission is permitted to exercise this jurisdiction “where the Commission has subject matter jurisdiction over the communications at issue and the assertion of jurisdiction is reasonably required to perform an express statutory obligation.”[43]

[42] NPRM at ¶46.
[43] *Id.*

The Commission has never questioned the fact that safeguarding the accessibility needs of people with disabilities to communications services falls within the execution of its statutorily prescribed functions. The string of accessibility statutes listed above attests to Congress's interest in having the Commission play an active and vital role in ensuring disability access to advanced communication technologies. Nor would this be the first time that the Commission decided to exercise its ancillary jurisdiction to ensure disability access. In its Section 255 proceeding, the Commission exercised ancillary jurisdiction over two information services - interactive voice response systems and voice mail. The FCC concluded that these services were so essential to the ability of persons with disabilities to effectively communicate, that the failure to require their accessibility would undermine Congress's interest in ensuring telecommunications access under Section 255.[44] To reach this decision, the Commission relied in part on the decision of the U.S. Court of Appeals for the D.C. Circuit in Mobile Communications Corporation of America v. FCC, which found that a "congressional prohibition of particular conduct may actually support the view that the administrative entity can exercise its authority to eliminate a similar danger."[45] Congress had already established a policy under Section 255 of not discriminating against people with disabilities in the provision of telecommunications services; the FCC now applied that authority to "eliminate a similar danger," *i.e.*, the danger that these individuals would not be able to access these two information services.

---

[44] *In the Matter of Implementation of Sections 255 and 251(a)(2) of the Communications Act of 1934, as enacted by the Telecommunications Act of 1996, Access to Telecommunications Service, Telecommunications Equipment and Customer Premises Equipment by Persons with Disabilities*, Report and Order and Further Notice of Inquiry at ¶46, WT Dkt No. 96-198, FCC 99-181 (rel. Sept 29, 1999).

[45] Mobile Communications Corp of America v. FCC, 77 F. 3d 1399 (D.C. Cir. 1996), *cert den'd* Mobile Telecommunication Technologies Corp. v. FCC, 519 U.S. 823 (1996)

Similarly, here, a failure to require accessibility to IP-enabled services would effectively undermine the Commission's goals both to promote the ubiquitous deployment of these technologies and to uphold our nation's policies to safeguard the accessibility interests of people with disabilities. If access is not provided as our nation's legacy telecommunications services shift to IP-enabled technologies, people with disabilities could lose access to communications functions to which they once had access, simply because newer technologies that provide equivalent functions have added capabilities that go beyond traditional telecommunications services.

XII. Contributions for Telecommunications Relay Services and Universal Service Need to be Supported.

The Commission seeks comment on the extent to which its decisions in this proceeding can affect contributions to the Interstate TRS Fund.[46] The Commission is correct to be concerned about sustaining this Fund in a changing communications market.

Title IV of the ADA requires common carriers providing telephone voice transmission services to provide telecommunications relay services. Intrastate carriers have traditionally fulfilled this obligation through state-operated programs that are funded through subscriber surcharges or regular telephone ratemaking proceedings. By contrast, interstate relay services – and for the present time all IP relay services and video relay services – are funded through an Interstate Relay Services Fund administered by the National Exchange Carriers Administration and overseen by the FCC. Under the Commission's rules, all common carriers that provide interstate services must contribute to this Interstate fund, including, but not limited to "cellular telephone and paging, mobile radio, operator services, personal communications service (PCS), access

[46] NPRM at ¶60.

(including subscriber line charges), alternative access and special access, packet-switched, WATS, 800, 900, message telephone service (MTS), private line, telex, telegraph, video, satellite, intraLATA , international and resale services."[47]

While the above list encompasses a variety of transmission modes, at present, only common carriers are actually directed to contribute to the Interstate TRS Fund. This poses a significant problem for the future. Unless IP-enabled service providers are required to contribute to the Interstate Fund, support for relay services will be eroded over time. Contributions from IP-enabled services providers are sorely needed to sustain the viability of these services, and to distribute costs fairly among all users of telecommunications, as we migrate away from traditional telephone services.[48]

This issue is closely related to support for universal service funds that support the Lifeline and Link-Up programs, programs that directly facilitate the ability of low income individuals to have telephone access. Because the incidence of unemployment is so high among people with disabilities, it is more than likely that this population would also be affected by a cutback in universal service funds. It is important to note that in the past, the Commission has exercised its authority to collect contributions to the universal service fund from entities that are not considered telecommunications carriers. Specifically, the Commission has required universal service fund contributions by entities that provide interstate telecommunications to end-users for a fee and payphone aggregators. The Commission's rationale for collecting these revenues has been that that these providers are similar to telecommunications carriers because their businesses are

[47] 47 CFR 64.604(c)(5)(iii)(A).
[48] Even were IP telephony companies to voluntarily contribute to relay funds, there would be no guarantee that they would continue to do so during financially austere periods. The lack of a stable funding source would put relay services in constant jeopardy.

built on access to the PSTN, they compete with common carriers in the provision of telecommunications, and the only reason that they have non-common carrier status is because of the way they have decided to structure their operations.

The Commission should similarly exercise its authority to collect contributions for TRS and universal service from IP-enabled service providers, whether or not these are classified as telecommunications providers. The viability of both the relay service fund and the universal service fund will be seriously threatened if VoIP and other IP-enabled providers are not required to continue contributing to these funding sources. It is critical that IP-enabled providers be obligated to help support these funds, which were created in the first place to guarantee the provision of telecommunications services to all Americans, including Americans with disabilities.

XIII. Conclusion

As our society migrates from traditional telephone services to Internet-enabled platforms, consumers with disabilities including older Americans, should not find that the protections that were available to them under the more traditional platforms disappear just because these newer technologies also have other, more versatile uses. As the agency tasked with ensuring that our nation's telecommunications policies serve the public interest, the FCC has both the authority and the responsibility to ensure that these new and innovative technologies maximize communication by people with disabilities. It must do so by adopting specific mandates that mirror those now applied under Section 255, to ensure that companies incorporate access into these Internet-based services as they are designed and developed.

The FCC's current regulatory scheme uses very different approaches to nearly identical services. As the lines distinguishing telephones from computers and other electronic devices continue to blur, the Commission's regulatory framework needs to shift from one that is tied to specific transmission formats and products to one that is tied to the functions of particular communication services. Only this approach will create a level playing field for providers, and assurances for consumers with disabilities that as IP-enabled services increasingly become a part of their lives, they will have the same rights and abilities to use these services as everyone else.

Respectfully Submitted,

/s/

Gregg C. Vanderheiden, Co-Principal Investigator
Judith E. Harkins, Co-Principal Investigator

RERC on Telecommunications Access
C/o Gallaudet University
800 Florida Avenue, NE
Washington, DC 20002
202-651-5677

Of counsel:

Karen Peltz Strauss
KPS Consulting
2120 L Street, NW
Suite 400
Washington, DC 20037
202-478-6148

May 28, 2004